

# INDIVIDUAL INCOME TAX

(CONSENSUS FORECASTING GROUP)

THOMAS JONES, PH.D.

OCTOBER 14, 2021

Office of State Budget Director

## IIT Receipts History

(\$ millions, NSA)

2

<b>DATE</b>	<b>RECEIPTS</b>	<b>% CHG</b>
FY16	4,282.1	5.2
FY17	4,393.9	2.6
FY18	4,603.6	4.8
FY19	4,544.7	-1.3
FY20	4,765.2	4.9
FY21	5,143.8	7.9
FY22Q1	1,262.3	6.5

## Methodology

3

Withholding = f(KY Wages and Salaries)

Range: 2001 Q1 to 2022 Q1

Seasonally Adjusted

First Differences

AR(1)

Declarations = 3-yr moving average

+\$20 million to FY22

## Methodology cont.

4

NetReturns:

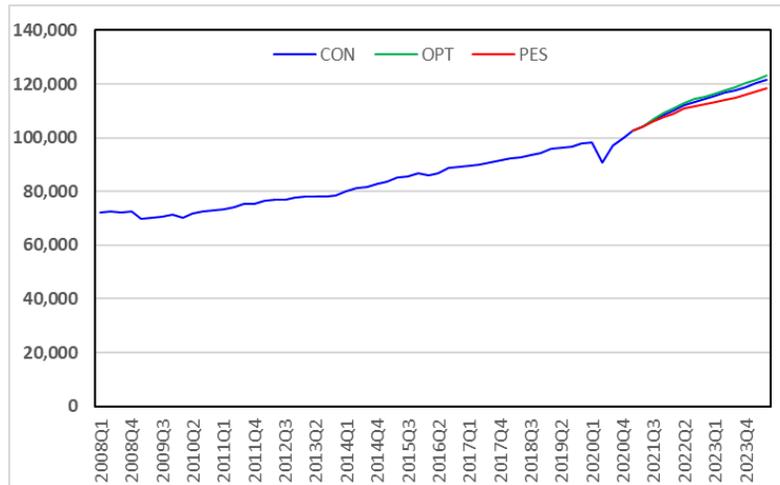
- \* Evaluation of PAYS and REFUNDS for last three years
- \* Modified by tax law changes
- \* Modified by UI withholding adjustments

Fiduciary = 3-yr moving average

# Kentucky Wages and Salaries

(\$ millions, SAAR)

5



# Withholding Forecasts

(\$ millions, NSA)

6

	<u>CON</u>	<u>% chg</u>	<u>PES</u>	<u>% chg</u>	<u>OPT</u>	<u>% chg</u>
<b>FY19</b>	4,144.7	-2.4	4,144.7	-2.4	4,144.7	-2.4
<b>FY20</b>	4,276.0	3.2	4,276.0	3.2	4,276.0	3.2
<b>FY21</b>	4,530.2	5.9	4,530.2	5.9	4,530.2	5.9
<b>FY22</b>	4,782.2	5.6	4,765.7	5.2	4,794.8	5.8
<b>FY23</b>	4,981.7	4.2	4,931.6	3.5	4,996.7	4.2
<b>FY24</b>	5,149.7	3.4	5,072.2	2.9	5,174.5	3.6

## Withholding Control Comparison

(\$ millions, NSA)

7

	<u>AUG</u>	<u>% chg</u>	<u>OCT</u>	<u>% chg</u>	<u>Diff.</u>
<b>FY19</b>	4,144.7	-2.4	4,144.7	-2.4	
<b>FY20</b>	4,276.0	3.2	4,276.0	3.2	
<b>FY21</b>	4,530.2	5.9	4,530.2	5.9	
<b>FY22</b>	4,795.8	5.9	4,782.2	5.6	-13.6
<b>FY23</b>	4,972.6	3.7	4,981.7	4.2	9.1
<b>FY24</b>	5,124.9	3.1	5,149.7	3.4	24.8

## Declarations Forecast

(\$ millions, NSA)

8

	<u>AUG</u>	<u>% chg</u>	<u>OCT</u>	<u>% chg</u>	<u>Diff.</u>
<b>FY19</b>	540.1	-12.5	540.1	-12.5	
<b>FY20</b>	523.7	-3.0	523.7	-3.0	
<b>FY21</b>	611.1	16.7	611.1	16.7	
<b>FY22</b>	578.3	-5.4	569.4	-6.8	-8.9
<b>FY23</b>	571.0	-1.3	568.1	-0.2	-3.0
<b>FY24</b>	586.8	2.8	582.9	2.6	-3.9

## Net Returns Forecast

(\$ millions, NSA)

9

	<u>AUG</u>	<u>% chg</u>	<u>OCT</u>	<u>% chg</u>	<u>Diff.</u>
<b>FY19</b>	-143.1	-46.1	-143.1	-46.1	
<b>FY20</b>	-35.6	-75.1	-35.6	-75.1	
<b>FY21</b>	3.3	-109.3	3.3	-109.3	
<b>FY22</b>	-155.5	-4,815.2	-50.0	-1,616.4	105.5
<b>FY23</b>	-133.2	-14.3	-49.0	-2.0	84.2
<b>FY24</b>	-109.8	-17.6	-48.0	-2.0	61.8

## Fiduciary Forecast

(\$ millions, NSA)

10

	<u>AUG</u>	<u>% chg</u>	<u>OCT</u>	<u>% chg</u>	<u>Diff.</u>
<b>FY19</b>	3.0	-19.1	3.0	-19.1	
<b>FY20</b>	1.1	-61.7	1.1	-61.7	
<b>FY21</b>	-0.8	-168.6	-0.8	-168.6	
<b>FY22</b>	1.1	-242.2	1.6	-306.6	0.5
<b>FY23</b>	0.5	-55.9	1.2	-28.1	0.7
<b>FY24</b>	0.3	-44.2	1.2	0.6	0.9

# Legislation Adjustments

(\$ millions)

11

FY22 -\$30.5 million

FY23 -\$48.8 million

FY24 -\$37.4 million

# IIT Forecast

(\$ millions, NSA)

12

	<u>AUG</u>	<u>% chg</u>	<u>OCT-CON</u>	<u>% chg</u>	<u>\$ Diff.</u>	<u>OCT-PES</u>	<u>% chg</u>	<u>OCT-OPT</u>	<u>% chg</u>
<b>FY19</b>	4,544.7	-1.3	4,544.7	-1.3		4,544.7	-1.3	4,544.7	-1.3
<b>FY20</b>	4,765.2	4.9	4,765.2	4.9		4,765.2	4.9	4,765.2	4.9
<b>FY21</b>	5,143.8	7.9	5,143.8	7.9		5,143.8	7.9	5,143.8	7.9
<b>FY22</b>	5,189.2	0.9	5,272.7	2.5	83.5	5,256.3	2.2	5,285.3	2.8
<b>FY23</b>	5,362.1	3.3	5,453.1	3.4	91.0	5,403.0	2.8	5,468.2	3.5
<b>FY24</b>	5,564.8	3.8	5,648.3	3.6	83.5	5,570.8	3.1	5,673.1	3.7

# COAL SEVERANCE TAX

(CONSENSUS FORECASTING GROUP)

THOMAS JONES, PH.D.  
OCTOBER 14, 2021

Office of State Budget Director

## Coal History

(\$ millions, NSA)

14

<b>DATE</b>	<b>RECEIPTS % CHG</b>	
<b>FY16</b>	120.6	-33.1
<b>FY17</b>	100.5	-16.7
<b>FY18</b>	89.6	-10.8
<b>FY19</b>	92.9	3.6
<b>FY20</b>	58.8	-36.7
<b>FY21</b>	56.1	-4.7
<b>FY22Q1</b>	12.9	6.1

## Energy Markets Information

15

- Coal prices currently falling.
- Forecast – coal prices rising.
- Coal severed tons are just above all-time low (5.9 million st to 6.8 million st)
- Natural gas prices currently rising.
- Forecast – natural gas prices rising for next year, then falling for next 2 years.
- Price of WTI recently hit a 4-year low (\$28/b). Prices now rising. Currently at \$58/b.
- Forecast – WTI to rise for next 2 quarters to \$69 and then taper.

## Methodology

16

Coal Receipts = f(PPI Coal, WTI Price of Oil, Henry Hub Price of Natural Gas, Real Consumer Spending on Durables)

\* Range: 2001 Q1 to 2022 Q1

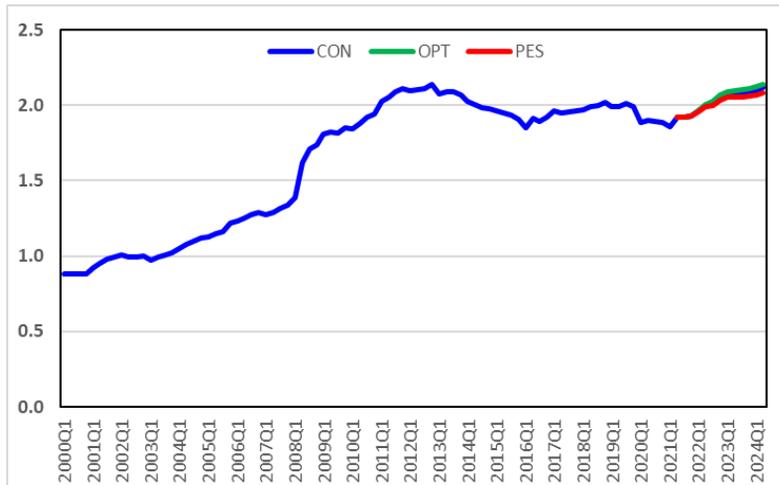
\* All Seasonally Adjusted Variables

\* First Differences

# Producer Price Index for Coal

(1982 = 1.00, SA)

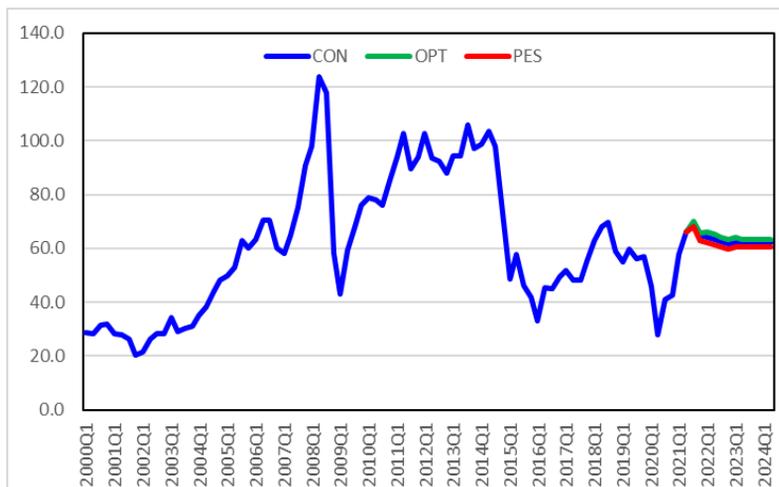
17



# Price of West Texas Intermediate Oil

(\$, NSA)

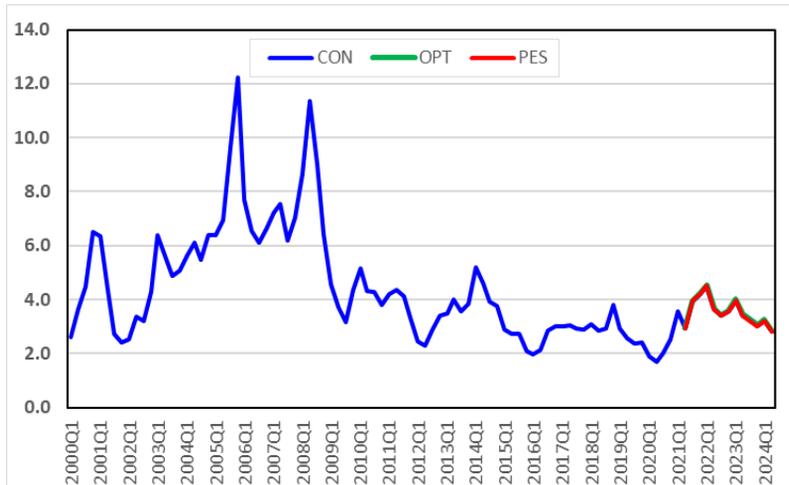
18



# Henry Hub Price of Natural Gas

(\$, NSA)

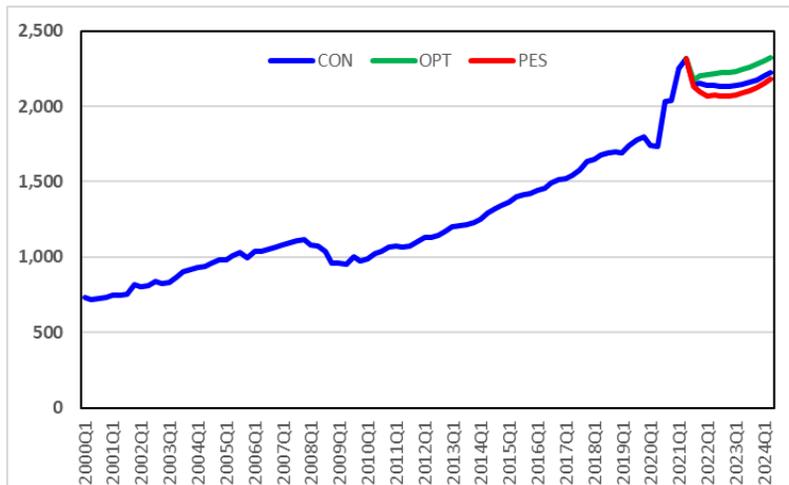
19



# Real Consumer Spending Durables

(\$ billions, AR)

20



# Coal Forecasts

(\$ millions, NSA)

21

	<u>AUG</u>	<u>% chg</u>	<u>OCT-CON</u>	<u>% chg</u>	<u>\$ Diff.</u>	<u>OCT-PES</u>	<u>% chg</u>	<u>OCT-OPT</u>	<u>% chg</u>
<b>FY19</b>	92.9	3.6	92.9	3.6		92.9	3.6	92.9	3.6
<b>FY20</b>	58.8	-36.7	58.8	-36.7		58.8	-36.7	58.8	-36.7
<b>FY21</b>	56.1	-4.7	56.1	-4.7		56.1	-4.7	56.1	-4.7
<b>FY22</b>	67.7	20.8	64.1	14.4	-3.6	65.1	16.1	63.0	12.3
<b>FY23</b>	61.0	-9.9	76.6	19.4	15.6	79.2	21.6	73.1	16.1
<b>FY24</b>	59.1	-3.1	75.2	-1.8	16.1	75.2	-5.0	71.1	-2.7

22

## SALES TAX

CONSENSUS FORECASTING GROUP

GREG HARKENRIDER  
OCTOBER 14, 2021

Office of State Budget Director

# Suspected Noise in the Sales Tax

23

- FY21 growth was 12.0 percent
  - ▣ Kentucky received considerable amounts of federal fiscal stimulus that sustained consumer spending
    - Direct stimulus checks
    - Unemployment insurance
    - Payroll protection from PPP Loans
    - Other exogenous spending related to federal aid (Child Tax Credit)
- Sales tax base has been expanding in recent years
  - Adding services, Base broadening
  - Enhanced ability to tax online sales
- The sales tax base broadening is structural and will persist. The federal fiscal stimulus is mostly transitory. Trying to separate these factors

# Monthly Sales Tax Collections

(Millions \$, Influenced by Federal Stimulus efforts from CARES, CAA, and ARP)

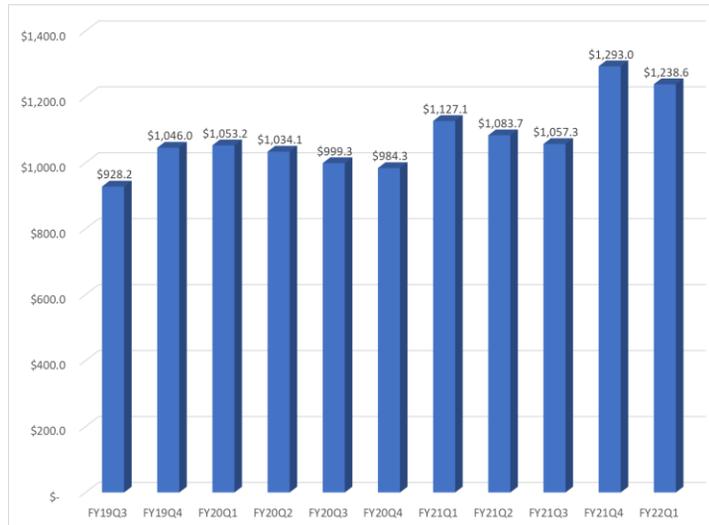
24



# Quarterly Sales Tax Growth

(Fiscal Year Quarters, Millions \$)

25



# Updating the Sales Tax Estimate

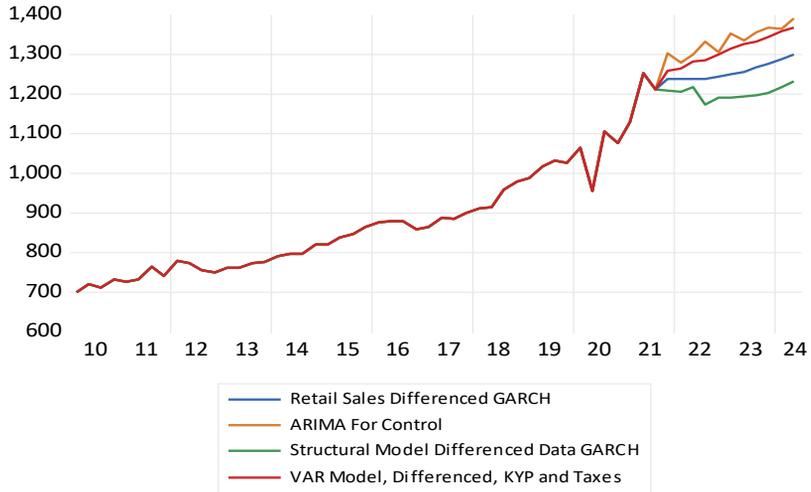
26

- Missed the blended first quarter estimate by \$18.0 million
- Re-ran the quarterly structural models, ARIMA, and VAR models
  - ▣ Tried to implement a KY transfers payment variable
    - Was not significant regardless of the sample size (got better with shorter sample)
  - ▣ Tried to “normalize” dependent variable (like we did after expanding the base in 2019), but lacked data to separate out the stimulus effect
  - ▣ Tried several structural variables (differenced data due to nonstationarity)
    - Income variables (KY wages, KY personal income, US counterparts)
    - US State and Local Personal Taxes
    - Consumer spending – Durables, U.S. Retail sales
  - ▣ VAR has seasonally adjusted sales tax and KY personal income as dependent variables, several different exogenous or predetermined variables
- Ultimately adopted a weighted blend of 3 models, primarily using GARCH estimation of structural and time series models

# Blended Sales Tax Model

(Quarterly Data, Calendar Year, Seasonally Adjusted, Millions \$)

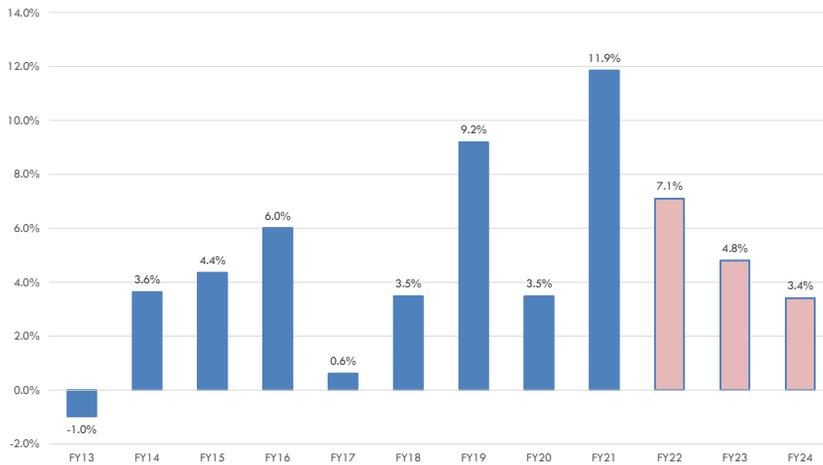
27



# Sales Tax Control Forecast

(Fiscal Year growth rates)

28



## Sales Tax Projections

(Millions \$)

29

Fiscal Year	Control	Optimistic	Pessimistic
FY 2021	\$4,561.0 12.0%	\$4,561.0 12.0%	\$4,561.0 12.0%
FY 2022	\$4,884.3 7.1%	\$4,935.8 8.2%	\$4,770.9 4.6%
FY 2023	\$5,118.8 4.8%	\$5,207.7 5.5%	\$4,861.3 1.9%
FY 2024	\$5,294.8 3.4%	\$5,470.1 5.0%	\$5,043.2 3.7%

## Sales Tax Forecast Needs for FY22

Percent Change

30

	Estimate	YTD	Needs
Control	7.1%	9.9%	6.2%
Optimistic	8.2%	9.9%	7.7%
Pessimistic	4.6%	9.9%	2.9%

# CORPORATION & LLET TAX FORECASTS

(CONSENSUS FORECASTING GROUP)

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## Corporate & LLET Forecast

Difference From August, Millions \$

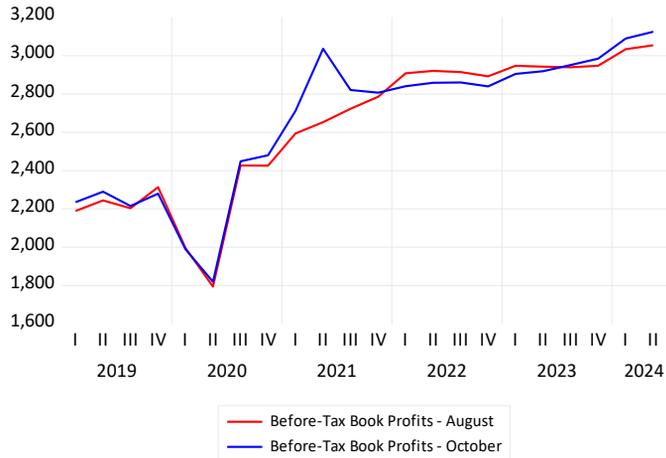
32

	FY22	FY23	FY24
Control	225.2	141.9	88.8
Optimistic	226.0	185.3	142.2
Pessimistic	174.6	48.1	(17.1)

# US Corporate Profits, Before Tax

Control Forecast, Billions \$

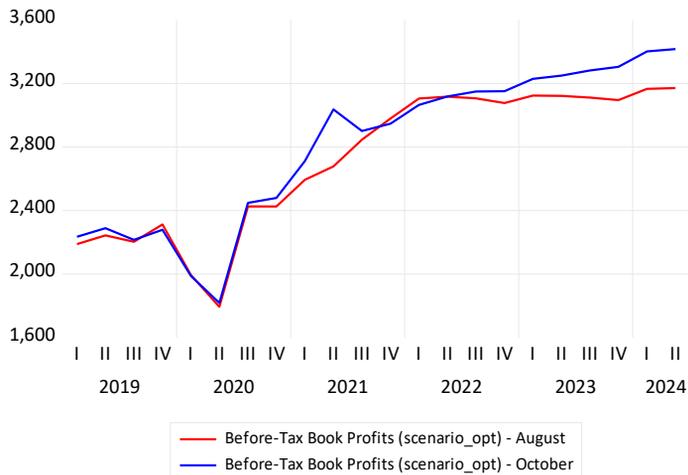
33



# US Corporate Profits, Before Tax

Optimistic Forecast, Billions \$

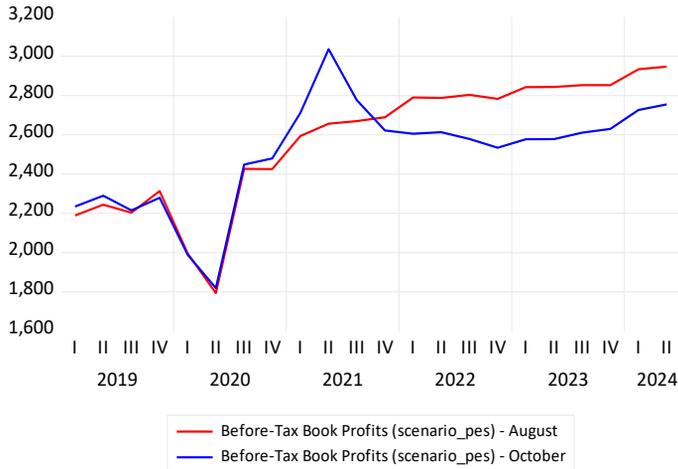
34



# US Corporate Profits, Before Tax

Pessimistic Forecast, Billions \$

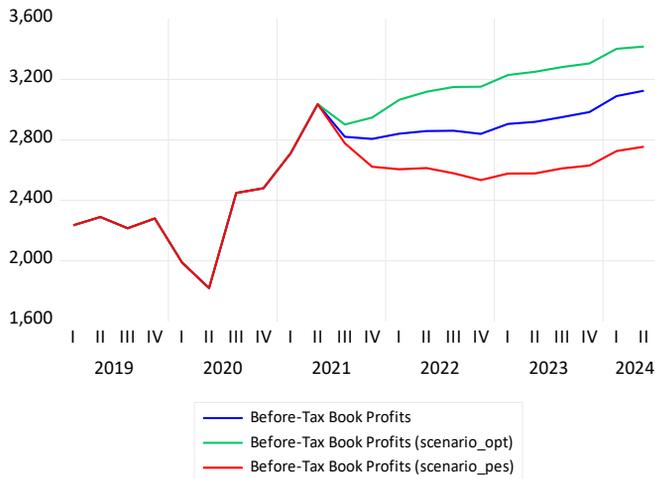
35



# US Corporate Profits, Before Tax

Control and Alternate October Forecasts, Billions \$

36



## Corporate & LLET Forecast

37

	FY22		FY23		FY24	
	Estimate	%Chg	Estimate	%Chg	Estimate	%Chg
Control	976.8	10.6	902.3	-7.6	947.8	5.0
Optimistic	1,025.1	16.1	994.4	-3.0	1,037.9	4.4
Pessimistic	926.2	4.9	808.5	-12.7	841.9	4.1

## Corporate & LLET Forecast Needs

Percent Change

38

	Estimate	YTD	Needs
Control	10.6%	76.0%	-4.4%
Optimistic	16.1%	76.0%	2.3%
Pessimistic	4.9%	76.0%	-11.4%

# PROPERTY TAX FORECAST

(CONSENSUS FORECASTING GROUP)

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## Property Tax Forecast

FY22-FY24

40

- No change to the August forecast
  - ▣ August estimate \$711.0M, 1.2%
  - ▣ Collections +16.5% YTD
- Not enough information to justify changes to most accounts
  - ▣ Real, Tangible
- On track to hit the estimate:
  - ▣ Motor vehicle. Estimate -1.1%; 0.1% YTD
- Telecom property, a subset of Tangible
  - ▣ Running \$10M ahead but tax bills were sent earlier this year. Expected to end the year in the forecasted range.

# CIGARETTE TAX

## CONSENSUS FORECASTING GROUP

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## Cigarette Trends

42

- FY20 cigarette tax revenue was 0.4% higher than FY19 on a tax rate-neutral basis
- FY21 cigarette tax revenue was 1.4% lower than FY20
- FY22 Q1 was down 4.4%
- Prices are rising on most cigarette brands (2020 was a very high year for profits in major tobacco companies)
- Seeing some expected movement down the product line to combat higher prices

# Cigarette Tax Projections

(Millions \$)

43

Fiscal Year	Control
FY 2021	\$349.9 -1.4%
FY 2022	\$341.0 -2.5%
FY 2023	\$334.3 -2.0%
FY 2024	\$326.6 -2.3%

44

## KENTUCKY LOTTERY CONSENSUS FORECASTING GROUP

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## Lottery Dividends

45

- **FY21 Kentucky Lottery Financials**
  - Instant tickets up 29.8% from FY20 (\$961.7 million total)
  - Draw games 17.9% higher than FY20 (\$508.0 million total)
  - I lottery instant play 256.7% higher than FY20 (\$118.6 million total)
  - Total ticket sales growth of 31.8%
  - In nominal terms, \$1,586.3 million in ticket sales
  - Sales growth of \$382.9 million over FY20
  - Total Prizes up 33.2%
- **Dividend Performance**
  - FY20 -- \$271.4 million General Fund
  - FY21 -- \$289.1 million General Fund
  - FY21 -- \$347.1 million total dividend

## Kentucky Lottery Forecast

46

	<u>Ticket Sales</u>		<u>Dividend Transfers</u>	
FY 2021	1,586.3	31.8%	347.1	27.9%
FY 2022	1,591.8	0.3%	319.3	-8.0%
FY 2023	1,695.9	6.5%	335.0	4.9%
FY 2024	1,801.6	6.2%	347.0	3.6%

# MISCELLANEOUS “OTHER” TAXES

(CONSENSUS FORECASTING GROUP)

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## Changes to Other Taxes Since August

48

- One-time cash inflow in FY22 equaling \$225 million pursuant to a legal settlement with Flutter Entertainment, the parent company of PokerStars
- Downgrade to insurance premiums tax (-\$18.0 million)
- Small upgrade to pari-mutuel receipts

# “Other” Receipts Forecast

(Millions \$)

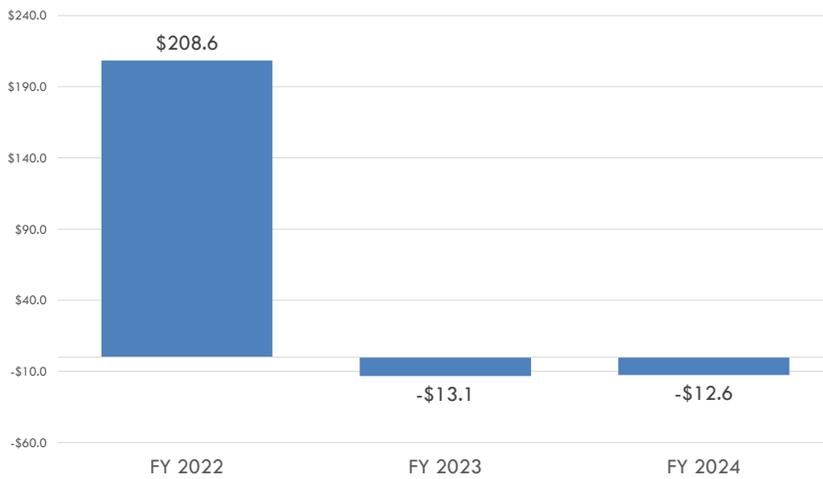
49



# “Other” Differences from August

(Millions \$)

50



# GENERAL FUND REMARKS

(PUTTING THE FORECAST IN CONTEXT)

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## Control Forecast Versus Historical Periods

(Compound Annual Growth Rates)

52

	FY21-24	FY15-21	FY10-21
Individual Income Tax	3.2%	4.0%	4.5%
Sales tax	5.1%	5.7%	4.6%
Business Taxes	2.4%	2.7%	7.9%
Property Taxes	2.7%	3.7%	2.8%
Lottery	6.3%	4.5%	3.4%
Cigarettes	-2.3%	8.0%	2.1%
Coal Severance	10.3%	-17.7%	-13.4%
Other	-2.1%	3.3%	2.7%
<b>General Fund</b>	<b>3.4%</b>	<b>4.3%</b>	<b>4.1%</b>

## Differences Since August

(Each October Scenario compared to August Consensus)

53

	<u>FY22</u>		<u>FY23</u>		<u>FY24</u>	
	Estimate	%Chg	Estimate	%Chg	Estimate	%Chg
<b>August Consensus</b>	\$ 12,940.5	0.9	\$ 13,240.6	2.3	\$ 13,758	3.9
<b>October Control</b>	\$ 13,581.6	5.9	\$ 13,742.2	1.2	\$ 14,189.6	3.3
Difference	\$ 641.1		\$ 501.6		\$ 431.5	
<b>October Pessimistic</b>	\$ 13,402.2	4.5	\$ 13,343.5	-0.4	\$ 13,754.7	3.1
Difference	\$ 461.7		\$ 102.9		\$ (3.5)	
<b>October Optimistic</b>	\$ 13,692.9	6.7	\$ 13,934.9	1.8	\$ 14,475.8	3.9
Difference	\$ 752.4		\$ 694.3		\$ 717.7	

## FY22 Needs to Hit Alternative Scenarios

(Growth over FY21 needed from October 2021 through June 2022 to hit estimates)

54

<b>Control</b>	<b>1.8%</b>
<b>Optimistic</b>	<b>3.0%</b>
<b>Pessimistic</b>	<b>0.0%</b>

## Quarterly GF Revenue Growth in FY21

55

